

NEW SPECIES OF *HILARIMORPHA* (DIPTERA: HILARIMORPHIDAE)¹

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ABSTRACT: Two new species of *Hilarimorpha* are described and illustrated, with keys to species of the *clavata* group.

DESCRIPTORS: Diptera; Hilarimorphidae: *Hilarimorpha ditissa*, *H. rivara*, new species: *clavata* group, key.

Following the revision of the genus *Hilarimorpha* (Webb 1974), some 20 additional specimens were sorted from unidentified material in the Canadian National Collections of Insects, Arachnids and Nematodes. Among specimens from northern British Columbia are two species new to science. Both of these species belong to the group having clavate maxillary palps. The following key separates the *clavata* group of *Hilarimorpha*. Type specimens are deposited in the Canadian National Collection (CNC) with certain paratypes retained in the collection of the Illinois Natural History Survey (INHS).

Key to the *clavata* group of *Hilarimorpha*

Males:

1. Length of body about 5.0 mm *obscura*
Length of body less than 3.0 mm 2
2. Aedeagal sheath and basal parameres (Fig. 2) narrow 3
Aedeagal sheath and basal parameres (Fig. 7) broad *rivara*
3. Aedeagus in dorsal view tapered basally (Fig. 2), in lateral view apex
expanded ventrally (Fig. 3) *ditissa*
Aedeagus in dorsal view tapered apically (Webb 1974, Fig. 16), in lateral
view apex not expanded ventrally (Webb 1974, Fig. 17) *clavata*

Females:

1. Apex of ninth tergum deeply emarginate (Webb 1974, Fig. 18) *clavata*
Apex of ninth tergum slightly emarginate (Fig. 4) *ditissa*

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Hilarimorpha ditissa, new species

This species (Fig. 1-5) is known only from northern British Columbia and is closely related to *H. clavata*, *H. obscura* and *H. rivara* in having clavate maxillary palps. In males, it differs from *H. obscura* in its smaller size. The narrow aedeagal sheath and basal parameres, and the expanded apex of the aedeagus in lateral view readily separate it from *H. rivara*. In dorsal view the aedeagus is tapered basally, which separates this species from *H. clavata*. The female of *H. ditissa* differs from *H. clavata* in having the apex of the ninth tergum only slightly emarginate.

Male. Length 2.2 ± 0.03 mm (N=10). Head dark reddish brown, pollinose. Eyes dark reddish brown. Ocelli clear, on dark reddish brown subtriangular pad, setae absent. Antennae (2:4:12) dark reddish brown; third segment 1.5 times longer than wide, twice the combined length of the first two segments, elongate setae absent; style (2:2) dark reddish brown, basal segment cylindrical, equal in length to apical segment. Maxillary palps (3:11) dark reddish brown, clavate, 3.7 times length of basal segment, 3.7 times longer than wide. Proboscis dark reddish brown, glossy. Thecae dark reddish brown, pollinose.

Humerus dark reddish brown with 6-8 short, fine setae. Mesonotum reddish brown, anterior half darker. Vittae indistinct. Posterior callus, halter, and scutellum dark reddish brown.

Wing length 2.8 ± 0.05 mm (N=10). Membranes (Fig. 1) hyaline, veins pale brown. Stigmal pigmentation absent. Humeral crossvein faint. R_1 ends proximal to fork of M_{1+2} and above tip of M_4 . R_{2+3} originates 0.79 ± 0.089 (N=10) of way between R_1 and R-M, ends above fork of R_{4+5} and tip of M_2 . R_{4+5} forks below tip of R_{2+3} and above tip of M_2 . R_4 originates 0.67 ± 0.003 (N=10) of way between R-M and tip of R_5 , ends above tip of M_1 . R_5 ends slightly beyond apex of wing. M_{1+2} forks distal to tip of R_1 and M_4 . M_1 originates 0.64 ± 0.006 (N=10) of way between R-M and tip of M_2 , ends below tip of R_4 . Pedicel of R_{4+5} 1.36 ± 0.021 (N=10) times pedicel length of M_{1+2} . M_2 ends below tip of R_{2+3} and fork of R_{4+5} . M_4 ends below tip of R_1 and proximal to fork of M_{1+2} . Anal cell closed near wing margin. A_1Cu_2 ends proximal to R-M and apex of second basal cell.

Legs uniformly dark reddish brown.

Abdomen and terminalia dark reddish brown. Aedeagal sheath (Fig. 2) narrow, tapered apically, apex truncate. Basal parameres (Fig. 2) narrow, elongate, bluntly pointed apically, extending to one-half length of aedeagal sheath. Aedeagus in dorsal view (Fig. 3) tapered basally, apex rounded, widest width 0.8 of length from base; in

lateral view (Fig. 4) aedeagus curved slightly ventrally, apex rounded, expanded ventrally, base expanded.

Female. Length 2.79 mm (N=1). Head and lower part of face dark reddish brown. Eyes black. Ocelli amber, on dark reddish brown subtriangular pad, elongate setae absent. Antennae (2:3:13) dark reddish brown, pollinose; third segment 2.6 times combined length of first two segments, 2.6 times longer than wide, elongate setae absent; style (3:2) dark reddish brown, basal segment cylindrical, 1.5 times longer than apical segment. Maxillary palps (2:14) dark reddish brown, clavate, apical segment seven times longer than basal segment, 2.8 times longer than wide. Proboscis dark reddish brown, glossy. Thecae dark reddish brown, pollinose.

Humerus dark reddish brown with six short, erect setae. Mesonotum dark brown, pollinose. Vittae indistinct. Posterior calli, halteres and scutellum dark reddish brown.

Wing length 3.5 mm (N=1). R₂₊₃ originates at R-M. R₄ originates 0.66 (N=1) of way between R-M and tip of R₅. M₁ originates 0.64 (N=1) of way between R-M and tip of M₂. Pedicel of R₄₊₅ 1.43 (N=1) times pedicel length of M₁₊₂. Other veins as in male (Fig. 1).

Legs uniformly dark reddish brown.

Abdomen and terminalia dark reddish brown. Posterior margin of ninth tergum (Fig. 4) slightly emarginate. Ninth sternum (Fig. 5) 0.75 times length of ninth tergum, apex truncate. Tenth tergum (Fig. 4) short, hemispherical, extending two-thirds length of cerci. Tenth sternum (Fig. 5) subrectangular, truncate apically. Cerci (Fig. 4) elongate, rounded apically.

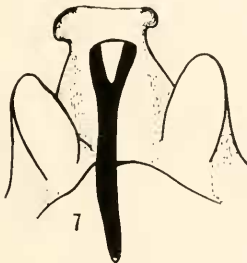
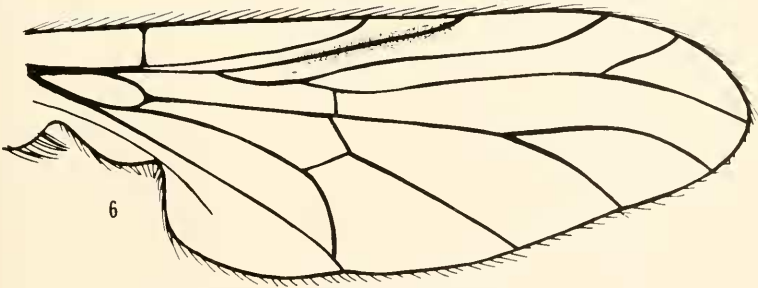
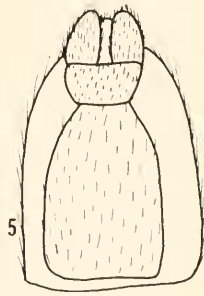
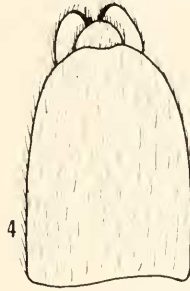
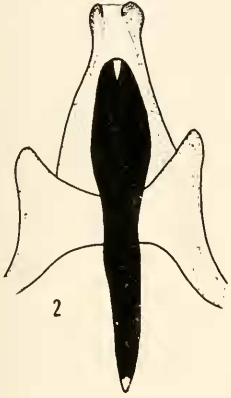
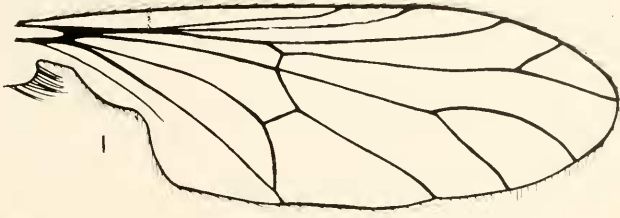
Holotype ♂ (CNC) Allotype ♀ (CNC), Paratypes 14♂♂ (CNC, INHS): BRITISH COLUMBIA, Pouce Coupe, 14-VI-1961, A. & M. Brooks.

Hilarimorpha rivara, new species

This species (Fig. 6-8) from northern British Columbia is known only from the holotype. It is associated with *H. clavata*, *H. obscura*, and *H. ditissa* in having clavate maxillary palps. Its smaller size readily separates it from *H. obscura*. It is separated from *H. clavata*, and *H. ditissa* by the broad shape of the aedeagal sheath and basal parameres. Like *H. ditissa* the aedeagus in dorsal

Figs. 1-5. *Hilarimorpha ditissa*. 1) Wing venation 2) dorsal view of aedeagal sheath, basal parameres, and aedeagus 3) lateral view of aedeagus 4) dorsal view of female terminalia 5) ventral view of female terminalia.

Figs. 6-8. *Hilarimorpha rivara*. 6) wing venation 7) dorsal view of aedeagal sheath, basal parameres, and aedeagus 8) lateral view of aedeagus.



view tapers basally although the widest width is subapical. In lateral view the apex of the aedeagus is not swollen ventrally as in *H. ditissa*.

Male. Length 3.0 mm (N=1). Head and eyes black. Ocelli amber, on distinct subtriangular pad; elongate setae absent. Antennae (2:5:15) black; third segment 1.7 times longer than wide, 2.1 times combined length of first two segments, elongate setae absent; style (2:2) black, basal segment globose, equal in length to apical segment. Maxillary palps (3:12) black; apical segment clavate, 4.0 times longer than basal segment, 3.0 times longer than wide. Proboscis and thecae black.

Humerus dark reddish black with six short, fine setae. Mesonotum black. Vittae indistinct. Posterior calli, halteres, and scutellum black.

Wing length 3.5 mm (N=1). Membranes (Fig. 6) pale greyish brown, veins dark brown. Stigmal pigmentation pale brown, covering apical half of R₁. Humeral crossvein dark brown. R₁ ends distal to fork of M₁₊₂ and above tip of M₄. R₂₊₃ originates 0.74 (N=1) of way between R₁ and R-M, ends above fork of R₄₊₅ and tip of M₂. R₄₊₅ forks below tip of R₂₊₃ and above tip of M₂. R₄ originates 0.66 of way between R-M and tip of R₅, ends above tip of M₁. R₅ ends slightly beyond wing apex. M₁₊₂ forks basal to tip of R₁ and M₄. M₁ originates 0.53 (N=1) of way between R-M and tip of M₂ ends below tip of R₄. Pedicel of R₄₊₅ 1.62 (N=1) times pedicel length of M₁₊₂. M₂ ends below tip of R₂₊₃ and fork of R₄₊₅. M₄ ends below tip of R₁ and distal to fork of M₁₊₂. Anal cell closed near wing margin. A₁Cu₂ ends basal to R-M and apex of second basal cell.

Legs uniformly dark reddish brown.

Abdomen and terminalia dark reddish brown, pollinose. Aedeagal sheath (Fig. 7) broad, narrowed apically, apex truncate. Basal parameres (Fig. 7) broad, thick, rounded apically, extending along two-thirds length of aedeagal sheath. Aedeagus in dorsal view (Fig. 7) tapered basally, apex rounded, widest width subapical; in lateral view (Fig. 8) slightly curved ventrally, apex rounded, base broad, twice as wide as middle of aedeagus.

Holotype ♂ (CNC): BRITISH COLUMBIA, Kleanza Creek, 14 miles east of Terrace, 19-VII-1970, W.R. Richards.

ACKNOWLEDGEMENTS

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LITERATURE CITED

Webb, Donald W. 1974. A Revision Of the Genus *Hilarimorpha* (Diptera: Hilarimorphidae). Journal of the Kansas Entomological Society 47(2): 172-222.